

Amendments to the Specification:

On page 3, line 20 through page 4, line 14, please amend the specification as follows:

SUMMARY OF THE INVENTION

In accordance with the above objects and those that will be mentioned and will become apparent below, the method of detecting a trace material in a cryogenic liquid in accordance with this invention comprises the steps of (i) measuring the absorption spectrum of the cryogenic liquid by passing light in the near infrared region through the cryogenic liquid, said cryogenic liquid absorption spectrum having a first reference energy, (ii) measuring the absorption spectrum of at least one impurity alone by passing light in the near infrared region through said impurity, (iii) passing a cryogenic liquid sample into a flow cell, wherein the maximum pressure drop of the cryogenic liquid sample across said flow cell is in the range of 0.5 to 5.0 lb./in.², (iv) measuring the absorption spectra of the cryogenic liquid sample by passing light in the near infrared region through the cryogenic liquid sample while the cryogenic liquid sample is within the cell, (v) comparing the cryogenic liquid sample absorption spectra to the cryogenic liquid and impurity spectra, (vi) confirming the presence of the sample absorption spectrum associated with the impurity, the sample absorption spectrum associated with the impurity having a second reference energy, and (vii) determining the concentration (C) of said impurity in the cryogenic liquid sample by the following relationship,

$$kC = \log \frac{\text{second reference energy}}{\text{first reference energy}}$$

where k is a fixed proportionality constant.

On page 6, lines 18 through 22, please amend the specification as follows:

The sampling (and analysis) system 30 of the invention includes a flow cell 32 an analyzer 52 to determine the presence and identity of trace components and/or contaminants (i.e., impurities) in the cryogenic liquid 7 and processing means 54 to control the analyzer and process data therefrom. In a preferred embodiment, the analyzer 52 comprises an near infrared spectroscopic analyzer.

On page 7, lines 3 through 10, please amend the specification as follows:

Accordingly, as discussed in detail below, when near infrared light from the light source 50 is passed through the cryogenic liquid 7 (i.e., sample) within the flow cell 32 (see Fig. 2), each trace material (i.e., component and contaminant) contained in the cryogenic liquid will exhibit a distinctive absorption spectrum. The identity of a selective one of the trace materials (i.e., target impurity) is then determined from the absorption spectrum (i.e., the wavelength of the light absorbed) associated with the target impurity. Further analysis of the absorption spectra (e.g., quantitative determination) is achieved by virtue of the processing means 54 of the invention, which, in a preferred embodiment, comprises a computer.

On page 10, lines 13 through 16, please amend the specification as follows:

Near infrared light (NIR) in the range of 900-2200 nanometers was then passed through the sample within the flow cell 32. The resultant near infrared absorption spectra (i.e., absorption curves), which were obtained using a Rosemount Analytical AOTF-NIR analyzer, are shown in Figure 5.